



KUNGL  
TEKNISKA  
HÖGSKOLAN



TRITA-NA-D0210 • CID-175 • ISSN 1403-0721 • Department of Numerical Analysis and Computer Science

# Semiotics in product design

Sara Ilstedt Hjelm



CID, CENTRE FOR USER ORIENTED IT DESIGN

## **Sara Ilstedt Hjelm**

Semiotics in product design

**Report number:** CID-175

**ISSN number:** ISSN 1403 - 0721 (print) 1403 - 073 X (Web/PDF)

**Publication date:** September 2002

**E-mail of author:** sarai@nada.kth.se

### **Reports can be ordered from:**

CID, Centre for User Oriented IT Design

NADA, Department of Numerical Analysis and Computer Science

KTH (Royal Institute of Technology)

SE- 100 44 Stockholm, Sweden

Telephone: + 46 (0)8 790 91 00

Fax: + 46 (0)8 790 90 99

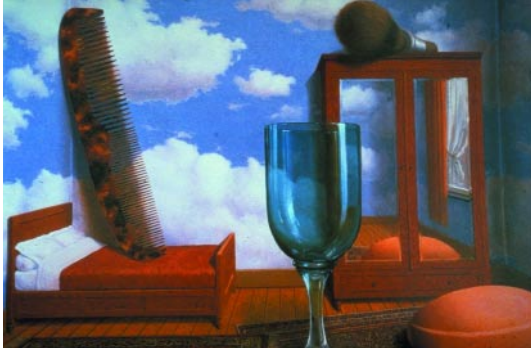
E-mail: [cid@nada.kth.se](mailto:cid@nada.kth.se)

URL: <http://cid.nada.kth.se>

# Semiotics in product design

<b>Part One: TERMINOLOGY</b>	<b>1</b>
Introduction	1
The sign	3
Denotation, Connotation and Myth	5
Medium and messages	7
Metaphors: Recognising the new	9
Mass production versus handicraft	12
Product positioning: Paradigms and Syntagms	13
Oppositions and Alignment	15
 <b>Part two: MEANING</b>	 <b>16</b>
The modernist hierarchy of content	16
Form and Content in Art	20
Designing identity	21
Function follows form	23
Conclusion	25
References	26





This painting by René Magritte illustrates how objects carry meaning beyond the literal.

# Semiotics in product design

## Part one: Terminology

### Introduction

This text is an attempt to show how semiotic study can be used to understand aspects of communication in product design. I will bring up some of the most common concepts and ideas in semiotics and see how they can be understood in a design context. I will also use these theories to analyse some underlying values and concepts in design theory like the complex interplay between meaning and form. I do not use semiotics to inform other designers of how they should do better products, but rather as a tool for criticising and reflecting about seemingly 'natural' ways of designing. To apply semiotics on product design has provided me with a set of invaluable tools for analysing issues like identity, metaphors and visibility in artefacts. This text owe a lot to Daniel Chandlers excellent book *Semiotics – the basics* [3] that provides a clear and contemporary introduction to the area. Semiotics became a popular approach to cultural studies in the late 1960's, partly as a result of the work of Roland Barthes. In his book *Mythologies* [2] he analysed advertisement and media and showed how seemingly familiar things signify all kinds of ideas about the world. Barthes essay about Citroen D.S. belongs to the classics in early design semiotics.

One approach in product semiotics deals mainly with the correct way to design artefacts so that they are easy to use and to understand. This is both a result of

modernist design theory (a product should communicate the correct way to handle it and its function) and a reaction against 'black box design' of high modernism in the sixties and seventies.

Product Semantics was a theory developed by Reinhardt Butter and Klaus Krippendorf [9] in the eighties and was influenced by contemporary continental philosophy. They choose the word semantic (meaning) to emphasise this aspect of communication. They introduced the idea of a product as a text with levels of meaning and criticised the blank design of modernism. But even there the lines between the post-modern and semi-modern ideas were blurry. While Krippendorf emphasised socially constructed meanings, Butter was more pragmatic and advocated a step-by-step method to correct design. The 'good design' approach is strong in Sweden where Rune Monö has taught Product semiotics in design schools for almost twenty years. His book *Design for product understanding* [13] attempts to develop a language of form for product designers mainly based on Pierce and the German linguist Karl Bühler. In Finland Susan Vihmas doctoral thesis *Products as representations* [17] from 1995 makes a similar effort to develop guidelines and tools for designing and analysing products based on the concepts icon, index and symbol. These works are very helpful for designers who want practical support, but their use of semiotic theory is too narrow when it comes to analyse artifacts in a cultural context.

Contemporary Semiotics have moved away from the classification of sign systems

to study how *meanings* are made and are not only being concerned with communication but also with the construction and maintenance of reality. [3]

Studying semiotics can assist us to become more aware of reality as a construction and of the roles played by ourselves constructing or designing it. It can help us understand that information or meaning is not 'contained' in the world, in books or products. Meaning is not 'transmitted' to us – we actively create it according to a complex interplay of codes of which we are normally not aware.



To grow up and socialize today does to a large extent depend on learning a complex system of signs and codes.



Magritte's painting is widely associated with semiotics. It reminds us that what we see is not a real pipe but a representation of it.

## The sign

The Swiss linguist Ferdinand de Saussure is one of the founders of Semiotics "which studies the role of signs as part of social life". [14] Umberto Eco states "semiotics is concerned with everything that can be taken as a sign". Semiotics therefore studies not only "signs" in everyday speech such as traffic signs, symbols or pictures but everything, which "stands for" something else. This also includes our material culture such as buildings, furniture and products. The most common object for semiotic analyses is a "text". A "text" usually refers to a recorded message, so that it is physically independent of its sender or receiver. It could be a book, a picture, TV-program, film or a product. A text is an assemblage of signs (such as words, images, sounds, gestures) constructed and interpreted with reference to the conventions of a particular genre and medium of communication.

The sign is the central term in semiotics. Saussure defined a sign as being composed of:

The Signified (signifié) – the concept it represents

A SIGN

A Signifier (Signifiant) – the form that the sign takes

A sign must have both a signifier and a signified; you cannot have a meaningless signifier/form or a meaningless signified/concept. The two always go together, they are like the two sides of a coin and Saussure introduced a model where they are represented on each side of a line.

Taking an example, the word "table" is the signifier and it represents the concept table. It doesn't necessarily refer to a real table, but a general concept of a table. A sign on a shop door that reads OPEN signifies that the shop is open.

Subsequent semioticians have criticised Saussure for neglecting the real world and have reclaimed the materiality of the signifier. This is also the approach that I choose to have. The Signifier is the physical form of the object, the aesthetics. This



This image of Jesus Christ is *not* a representation or a sign - it is the holy thing itself. There is no human interpretation that can diminish and distort the image, it is a direct imprint. Icons are likewise not *pictures* of something, but holy images themselves.

is what we see, touch, smell and experience. The signified is the content, whatever meaning we make out of what we meet and experience. A later semiotic model by Charles Pierce includes the real object "the table" and is turned into a triangle. Louis Hjelmslev [8] has used the terms content and expression to refer to the two concepts and has addressed the complex relation between form and content in the sign itself.

From a design perspective the "real thing" is in fact the central issue. Therefore the signifier, the form is at the centre of our interest. If the *word* car signifies the *concept* car, what does the *real* car signifies? Well, a car signifies a car doesn't it? Well not quite, though with objects it is very easy to let the signifier and signified melt into one. The world around of us of products and buildings becomes naturalised; it seems to be a natural, unquestionable status quo and

not a constructed piece of human artefact. We often fail to realise that the most obvious and self-evident around us, the real world – isn't that self-evident after all. Psychoanalytic theory also contributed to the revaluation of the signifier. The French psychoanalyst Jacques Lacan [10] sought to highlight the primacy of the signifier in the psyche by rewriting Saussure's model. He put the Signifier on the top represented by a big S and the signified below the bar represented by a small s. Lacan wanted to show how the signified inevitable "slips beneath the signifier and refuses definition". To Lacan expressions like anger, happiness etc were signifiers of psychological events. Negative feelings without expressions turned into anxiety. Rewriting the Saussurean model for a design perspective would look like this:

S – signifier, the expression, The FORM, the aesthetics, Objective – outer world  
s- signified, the content, The CONCEPT, what it stands for, Subjective – innerworld

The signifier is the physical form of an object; what we see, touch and smell in the objective and shared reality. The signified is the content, the meaning of the object; what we experience, think and feel when we interact with the artefact.



## Denotation and Connotation

Denotation and Connotation are two basic concepts in semiotics that are very useful. Denotation refers to the literal, actual meaning of a sign – *what* the product is, i.e. a chair, a telephone, a book etc. To Denotation I also add the obvious function of an object: How to *handle* it. You sit on the chair, you use the telephone for making phone calls etc.

This sound straightforward enough but in a world of technological and product development, recognizing *what* it is and *how* to handle it can be very difficult. This is also the domain where most product semiotics dwells. Products should be unambiguous and easy to use, clearly communicating their function. Preferably you should not need a manual to use simple product or a computer programs. You should be able to recognise and use a simple product like a parkingpost without problems. Cognitive scientists such as Donald Norman and numerous designers have helped to develop this field during the last decade. Designing self-evident products are today a question of letting the designers be part of the productions cycle from an early start. The knowledge is there, the question is of how to bring it in. (This important issue is however not the scope of this text.)

Connotation is *how* you do it, the choice of words or media. In the picture below we see two chairs the first is made 1934 by Bruno Mattson and the second 1987 by Jonas Bohlin. The *Denotation* is similar, they are both chairs and their



used to sit on, they are both made by Swedish designer and have become design icons of their time. But the *connotation* is radically different. One is made from natural material, bent birch wood and woven raw textile, the other one made from concrete and steel. One uses organic forms, it seems to follow the body of the user, silently supporting and providing a comfortable rest without imposing itself. The other one is made from two flat blocks of concrete and a very simple geometric shape of the steel frame forming the arm handle. It uses the basic signs of a chair, a sitting area, a back and a handle, without actually looking like it would be made for resting on. In many ways it paraphrases Gerry Rietvelds experimental Red/blue chair from the 1920:ths as an aesthetical provocation. It pushes the modernistic

This anonymous and vague design is typical of many contemporary products. The denotation is unclear, we are not sure what it is and how to use it.



This Xerox mashine at my work had controls and levers that were designed so that you immediately understood which way to turn them.

aesthetic as far as it gets and signals its death, here it is already post-modernism.

Denotation and Connotation are often described as different levels of meaning. Barthes introduces the idea of different orders of signification. The first order of signification is that of denotation, this is the sign consisting of signifier and signified. Connotation is the second order of signification, which uses the denotative sign as its signifier and attach to it an additional signified.

In reality it is difficult to separate the two levels, Barthes himself later gave priority to the connotative level and notes that is no longer easy to separate the ideological from the literal. Fiske warns, “ It is often easy to read connotative values in denotative facts”[6].

Denotation and connotation combines into the third order of signification, which Barthes calls Myth. For Barthes myths were the dominant ideologies of our time. “...Myth has in fact double functions: it points out and it notifies, it makes us understand something and it imposes it on us...It transforms history into nature” writes Barthes in a famous example from *Mythologies*.

Signs and codes are generated by myths and in turn serve to maintain them. Myths can be seen as extended metaphors. Like metaphors, myths help us to make sense of our experience within a culture.[12] For Barthes, myths serve the ideological function of naturalisation. Their function is to make dominant historical and cultural values; attitudes and beliefs seem entirely “natural”, “normal”, obvious and commonsense – and thus objective and true reflections of “the way things are”. Contemporary sociologists argue that social groups tend to regard as “natural” whatever confers privilege and power upon themselves.[3]

“Unlike the more or less ephemeral media, design has the capacity to cast myths into enduring, solid and tangible form, so that they seem to be reality itself.” Writes Adrian Forty. [5]

Returning to two chairs, we can try to reveal what Myths or dominant values they reflect. The Bruno Mattson chair was first designed in 1934. It is comfortable, modern, natural and does in every way embody the modernistic ideas of honesty in form, function and material. The chair follows the human body in a design that is both elegant and functional.



These two chairs have a similar denotation and very different connotation. On a myth level they reflect the dominant ideologies in Sweden.  
Bruno Mattson, *Eva*, 1934.  
Jonas Bohlin, *Concrete*, 1987

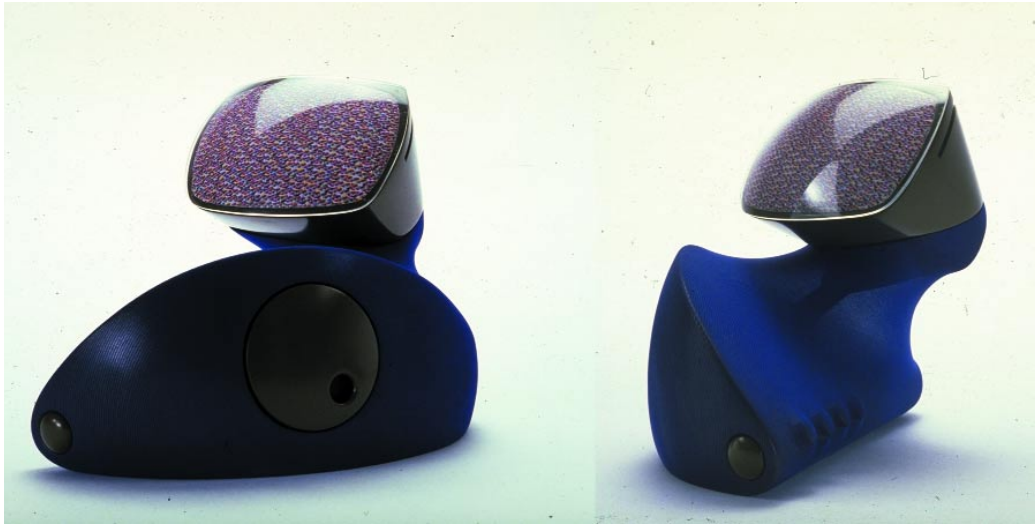
It has become a design icon for its time and reflects the new dreams of Folkhemmet, the Swedish social democratic vision of a “peoples home” that became closely allied to modernism or “Funktionalism” as it was called in Sweden. A modern political idea that were more “humanistic” and “supportive” to the “body” of the Swedish people then i.e. the German or Russians ideas and also easier to accept, less imposing and authoritarian.

The other chair by Jonas Bohlin from 1987 sends a totally different message. Here the modernistic aesthetic has become empty signifiers that can be used for provocation and a formal experiment. The chair is clearly not comfortable and it certainly not humanistic. It was made in a time when the Swedish social democratic visions were falling apart and it became obvious that “The peoples home” was not for everybody. Jonas Bohlin’s chair in steel and concrete reflect the rift in the new Sweden where some people get beaten and others spend fortunes on “designer chairs”.

## Mediums and messages

Signs and codes are always anchored in the material form of a medium. It might refer to such different categories as typewriting, print, film, radio, handwriting or different types of mass-communication. Marshall McLuhan famously declared, “The medium is the message”. The kind of medium you choose (or not) affects the content of the message.

The media that is typically judged to be the most realistic are photographic – especially film or television. James Monaco suggests that “in film the signifier and the signified are almost identical...the power of language systems is that there is a very great difference between signifier and signified; the power of film is that there



Satori TV, by Peter Stathis from 1988, make a polemic argument about the use of television for company, and the integration of biology and technology in products.

is not”. Even if we don’t mistake a film for a real thing we need to remind ourselves that what we see is just one of many possible representations. But compared to products or buildings film seems as solid as a daydream. Even a design model is given a weight and solidity that makes it appear real. A three-dimensional model, even if it doesn’t work, sparks people’s imagination the way a sketch or a rendering would never do. With design ‘reality speaks for itself’ and what is said renders and aura of truth.

Cranbrook Academy of Art in USA where soon to pick up the new ideas of product semantics in the late 80:ths. They had intense discussions about form, technology and design and begun to visualise their ideas with product models. This approach, called *Product Polemics*, was a way to start a debate about meaning and culture that were far more convincing than mere texts. Lisa Krohn’s phonebook signaled a new approach to peronal information technology and the use of metaphors in design. Peter Stathis pet television Satori makes a polemic argument about the integration of artificial “life” in products.

To denaturalise the obvious is one of the great challenges of semiotic analyses. It is only then we can see what is in charge of the meaning making and whose power it is supporting. Making alternative models like Cranbrook is a good way to challenge this superiority.





"The first car and the last carriage"

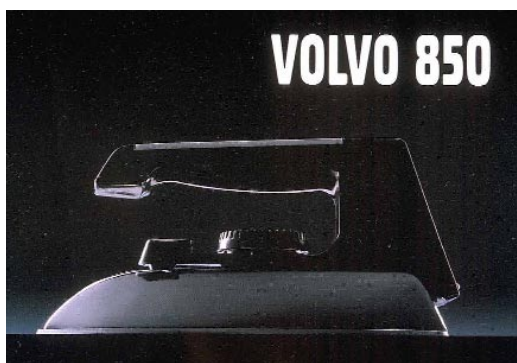
This Picture from Acceptera (1931) illustrates the problem with new products. The first car is nothing but a carriage without horses.

## Metaphors: Recognising the new

The use of Metaphors in design is fundamental. Whether in products, graphics, film or media, metaphors are a key element. Roland Barthes says that "No sooner is a form seen than it must resemble something: humanity seems doomed to analogy." A study showed that English speakers produced an average of 3 000 novel metaphors per week.

In semiotic term, a metaphor is something that explains the unknown in wellknown terms. When Volvo introduced a new car model they launched an advertisement campaign that used powerful metaphors. A picture of an arrow and the word "Volvo 850" suggests that the new model is swift as an arrow. An iron would mean that "it lies like an iron on the road" etc.

The objects around us constantly change appearance. Contemporary products do not look like they used to. A camera i.e. has changed a lot since the thirties. Many products today are new; they lack clear, formal traditions and are unknown to most people. Computer and nano technology also makes the formal appearance of





To the left an archetypical telephone, common in most homes from 1935 to 1970.

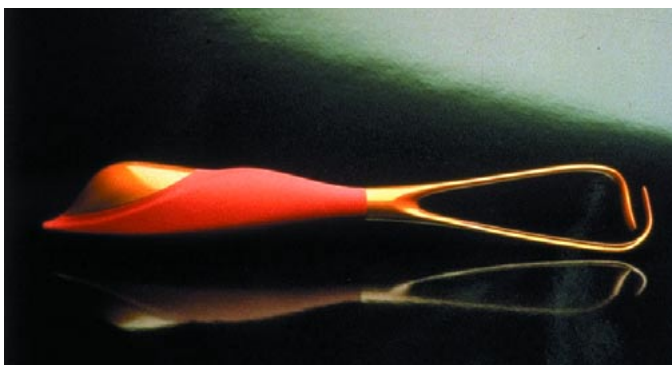
To the right the Danish telephone to be designed for softwarebased telphonesystems. The numeric keyboard and the handle were made to look like an iconic "sign" of a telephone.

the product less self-evident. In product semiotics and graphic communication, the sign or icon most readily identifiable with the object in question is called the characteristic sign. (Monö calls it the current sign, others the basic sign).

This picture from Acceptera illustrates the problem. The first car is nothing but a horseless carriage. The Horsepower's are instead hidden in the engine. It is not until twenty years later that the car has found a form that is established.

How may we recognise something new? The answer is that we cannot. There must be something familiar in the new. The solution is to make an analogy to something well known. We can use a metaphor that helps to create understanding of the function; it facilitates a re-cognition of the product. Therefore design exists in the interplay between tradition and transcendence.

The modernist era is full of aesthetical references of how to design. A design should be "Honest", "Thruthfull" and "Selfevident", and materials shall be "correctly presented". To hide, conseale or decorate was banned from design and architecture. This aesthtical concept has become so common in industry and product development so that we take it totally for granted and it is not until very recently that it has been questioned.



This electric mixer has used the metaphor of an Octopus to facilitate intuitive use. When you squeeze the "body" of the Octopus in your hand it rotate the "arms" in an attempt to escape. I you press harder it will rotate faster.

No Picnic Design



Left: The old projection camera from Svecia.

Below, the redesign made by Ivar Inkapööl in 1994.

This projection camera was designed for large Swedish firm that produces screen print equipment. The camera is a conventional industrial machine, light military green in colour with "boxes" of riveted metal plates with the lens forming a black pyramid up front. It accounts visibly for its material, the technique used in its manufacturing as well as its scale. It does not pretend to be what it is not: there is nothing ingratiating or cosmetic about it. It is an excellent representation of the slogan of the industrial designer and product semiotic Rune Monö: "Design shall convince, not seduce." [13]

It can also be viewed as an illustration of Sullivan's slogan from the early century: "Form follows function". The boxes hide their contents for sure, but, on the other hand, it was the most rational way of putting them together. In its boring, clumsy

and industrial look, the camera, in all essentials, represents modernism's fundamental principles of honesty of shape and material, of simplicity and rationality and of the machine as norm.

The new machine, which was developed by Inkapööl in 1994, is something different entirely. It looks like an over-dimensioned toy painted in bright colours and fashioned with the familiar accordion drapery. It is not merely a camera, it also looks like one. But the camera it refers to is not



modern but old-fashioned, maybe because the characteristic sign for a camera is most perceptible (i.e. distinct and comprehensible) in an old and well-established form. On Svecia's new camera, the lens is shaped like an accordion which signals a zoom function, that the size of the image can be altered. Yet, Svecia's product is not a camera but a projector. It does not take pictures, it projects them onto a screen. The iconographic rhetoric is not fully "true" as it does not give a correct description of the product. Instead, it tells a story where the importance does not lie in doing it correctly but in doing it well.

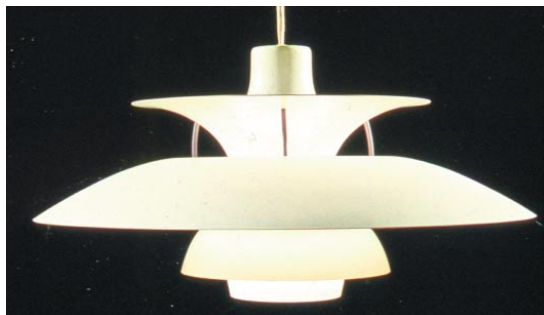
The new camera thereby revokes the demand of modernism for the form to faithfully follow function. Instead, we have an example where "form follows understanding".

Since there is nothing in Svecia's camera that refers to its actual size, it also suspends our perception of space. Pictured without references to other objects, it looks like a big hand camera, maybe meant to be mounted on a tripod since there is no part by which to hold it. It could be a children's toy-camera from the series "My first Sony". A large machine may appear intimidating. Through making it look small, a distance between what it is and what it appears to be is created. This can be regarded as a kind of conscious and humorous distancing to high technology and the industrial environment. In an effective way, it undermines the patriarchal hierarchy that exists in industrial environments, which is a world of performance, men, technology and efficiency.

### Mass production versus handicraft

A Token is an *original*, whereas Types refer to the amount of words or replicas of the original. The designprototype is a Token, close to the original handcrafted object. The Type is the mass-produced industrial good. Walter Benjamin points out that technological society is dominated by reproductions of original work – token of the original type. Even if we see an original piece of art, the *way* we see it is influenced by number of reproductions, copies and even pastiches. In the post-modern era the bulk of texts and products are indeed "copies without originals". But a mass-produced object can rise to the status of a type if it becomes reproduced

often enough. We say that this is an "original" Olivetti typewriter or Eames chair.



Massproduced objects that are copied many times can become tokens; Original, crafted and unique. The PH lamp by Paul Henningsen have been copied a number of times.



## Product positioning: Paradigms and Syntagms

Early semiotics was part of the Structuralist movement. They engage in a search for deep structures underlying the surface features of phenomena. Structuralism tries to describe the overall organisation of sign systems as 'languages' – as with Levi-Strauss totemism and kinship rules. Structuralism emphasises differences and opposition in sign systems 'in a language, as in every other semiological system, what distinguishes a sign is what constitutes it' [14]

Chandler points out that advertisement is a good example of this "since what matters in 'positioning' a product is not the relationship of advertising signifiers to real world referents, but the differentiation of each sign from the others to which it is related." This is also true in all kinds of design where the object is made to differ from other similar products in the same category.

Saussure emphasised that meaning arises from differences between signifiers. These differences are of two kinds: Syntagmatic (concerning positioning) and paradigmatic (concerning substitution). These two dimensions are represented as two axes, where the horizontal is the Syntagmatic and the paradigmatic is the vertical.

SANG  
BOY- DIED      Paradigmatic axis  
THE- MAN- CRIED

Syntagmatic axis

Signs enter into a *paradigmatic* relation when you can substitute one for another; they can appear in the same context but not at the same time.

In film and television paradigms include ways of changing shots, such as cut fade, dissolve and wipe. The medium or genre are also paradigms i.e. radio, newspaper, Internet, and particular texts derive meaning from the media that is used. To a semiotician the medium is not neutral, as Marshall McLuhan famously exclaimed "The medium is the message".



A set of tableware is a syntagm of different parts forming a whole.  
Liljeblå Arbetarservis by Kåge for Gustavsberg, 1917.



These different car models from late fifties have a paradigmatic relation, they can be substituted for one another.

A *syntagm* is an orderly combination of interacting signifiers, which form a meaningful whole within a text. In language a sentence is a syntagm of word, so too are paragraphs and chapters. A larger syntagm is composed of smaller syntagm with interdependence between both. Syntagmatic relations are the various ways in which elements within the same text may be related to each other.

Syntagmatic relation highlights the importance of part-whole relationships. Saussure stressed that ‘the whole depend on the parts and the part depend on the whole.

Roland Barthes has described the paradigmatic and syntagmatic elements in ‘the garment’ system. The paradigmatic elements are the items which cannot be worn not the same part of the body at the same time, such as hats, shoes, trousers etc. The Syntagmatic dimension is the juxtapositions of the different elements in a complete ensemble.

Products that belong to the same paradigm perform the same function in a given context. If we need to sit down we can use a sofa, a chair, a stool or a bench. If we are thirsty we can drink water, coke, tee, beer etc. Which product we choose is shaped by socially defined, shared classification systems, some of them being personal taste.

The paradigmatic level therefore belongs to *product positioning*. When we are buying a new mobile phone we compare different phones from the same product category that might have only minor differences in price, performance and design.

A mobile phone belongs on the Syntagmatic level to personal electronic wearable products and other products in this syntagm might be a pda, a Walkman or a radio. But this syntagm is in turn part of larger syntagm with all the products belonging to this person.

If we move down on the Syntagmatic levels to the individual mobile phone, we find that the phone itself is a syntagm with special set of paradigmatic elements. There are buttons, interface, colour, batteries, hands free, display etc. These elements should all be selected and combined to a satisfactory product. This is the

level where most product designers operate, carefully selecting and designing the parts to a whole.

When we furnish our home we pick items that belong to the syntagm of 'A Home'. Certain things belong there like a bed, a sofa, a kitchen table, a Television set etc. When we have one TV in the living room, we are not likely to buy another one for the same room, but we consider putting a smaller one in the kitchen. We combine the selected signs through rules (i.e. flowery chiffon doesn't go with concrete walls). We can substitute or select, a PH-lamp for an Art Noveau lamp, thereby sending a different message. The syntagm is formed by rules and conventions within that specific genre. The architect/designer are likely to select a PH-lamp, whereas another family might want a more 'cosy' lightning. These conventions can be either very strong or subjected to change.

## Oppositions and Alignment

Our material culture is full of oppositions in terms of male - female, work - home, production - consumption etc. They all serve the purpose to enhance and naturalise categories that are inherent in the culture.

It is an open question whether our tendency to think in oppositions is determined by the prominence of oppositions in language or whether language merely reflects a universal human characteristic. Oppositional pairs are rarely equally weighted. One in the pair is conceived of as more general and neutral and the other as less



Women consume at home, men produce at work.  
Products confirm and naturalise cultural oppositions.

normal. There is usually a hierarchic relation between those two where the more generic term is higher.

Structural theorists see paired signifiers as part of the deep structure that shapes the preferred reading of texts. The paired signifiers sometimes become aligned in a 'vertical' relationship. The pair man – mind becomes aligned with the pair woman – body. Feminist theorist Kaja Silverman [15] observes, "A cultural code is a conceptual system which is organised round key oppositions and equations, in which a term like a 'woman' is opposed to a term like a 'man', and with each term aligned with a cluster of symbolic attributes."

A person called "woman" is therefore aligned with a number of attributes and products like hairdryers, makeup, household machines, vacuum cleaners etc. Those products not only appear as "natural" in their context but also reinforces the "womanness" of the person.

## Part two: MEANING

### The modernist hierarchy of content

The fundamental oppositions in design has been between physical form and content. Since Plato the material world have had a subordinate position in the western mind. For Plato 'Form' was the creative force that manifested itself into the soulless matter. The concept or idea was always superior to the real world object. To

experience a piece of art or a text was to see through it to the thought within.

The aesthetic confusion of the 1900-century led to a revival of these ideas during early modernism. In a Deutsche Werkbund congress in 1911 the German design prophet Hermann Muthesius claimed that Form was superior to matter.

"– Much higher than function, material and technology is the FORM. If the FORM didn't exist we should still be living in a barbarian world" [18]

The inclination to use the word 'form' to indicate content or concept has caused some confusion in the design community. With form today





we mean the *material* aspect of a thing, but for Plato it was the *immaterial*.

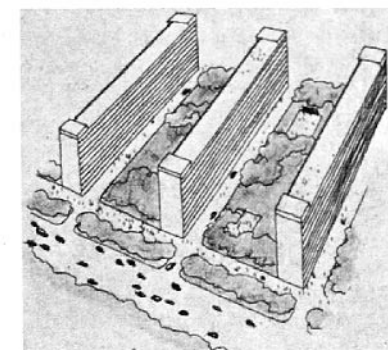
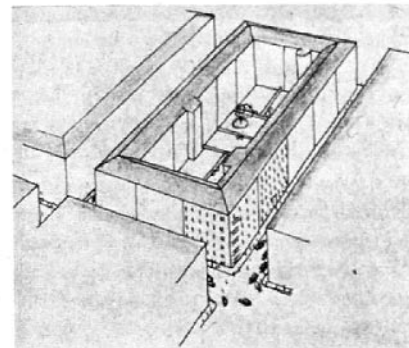
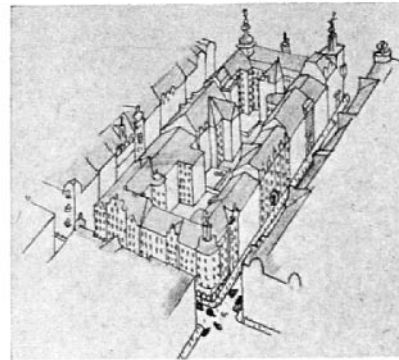
The kind of forms Muthesius advocated were abstracts "essential" shapes and a standardised production system. In the audience were the young architects that would shape modernism: le Corbusier, Mies van der Rohe, and Walter Gropius.

With them decoration became banned from architecture and design, which would be made of simple geometric forms and clean white surfaces. The idea was to make the signifier, as invisible as possible so that the true idea, the FORM would show through. This did in fact deny the material aspect of their work and lay the ground for a building industry that became careless about material and sensual experience. But all modernists were not as idealistic as the Germans. In Sweden modernism became a lot more pragmatic and politically allied with the young social democracy. In spite of that they were just as aesthetically neoplatonic oriented as their German colleagues.

In the book "Acceptera" from 1931, [1] Swedish design theorist Gregor Paulson, architect Gunner Asplund and friends, advocates an ethically based aesthetic, with honesty in form, function and material as well as an self-evident FORM. This book has been enormously influential in Swedish design and architecture and is clearly echoed in Monö when he disappointedly remarks about a line on a handle "from a semantic point of view this is false. It has been placed there purely for decoration."

The idea to take away the references from products in order to make them more justified soon became a general modernist aesthetic. It culminated in the high modernism of the seventies, with its austere concrete buildings and black box design.

But taking away the signifier from the artefacts doesn't make them more spiritual. A raw concrete building with identical windows is not experienced as honest and true but as inhumane and boring. What the modernist didn't realize was how we human

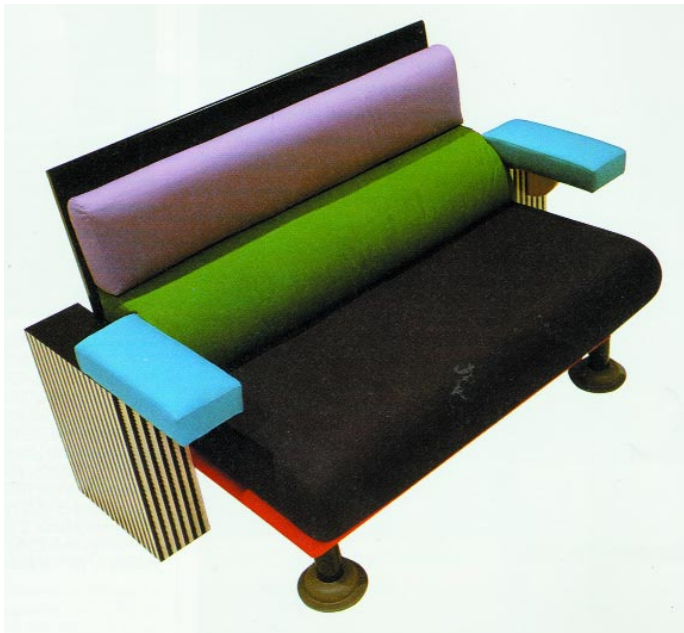


These pictures from Acceptera (1931) show "the natural development of buildings" projected into the future.

beings tend to interpret meaning into *everything* including a white surface. Hjelmslev notes that both expression and content have substance and form. [8] The same expression in different forms means different things. The actual *material* in itself has references and gives the content a different meaning. That is why exactly the same mug in plastic means a different thing than one in ceramics.

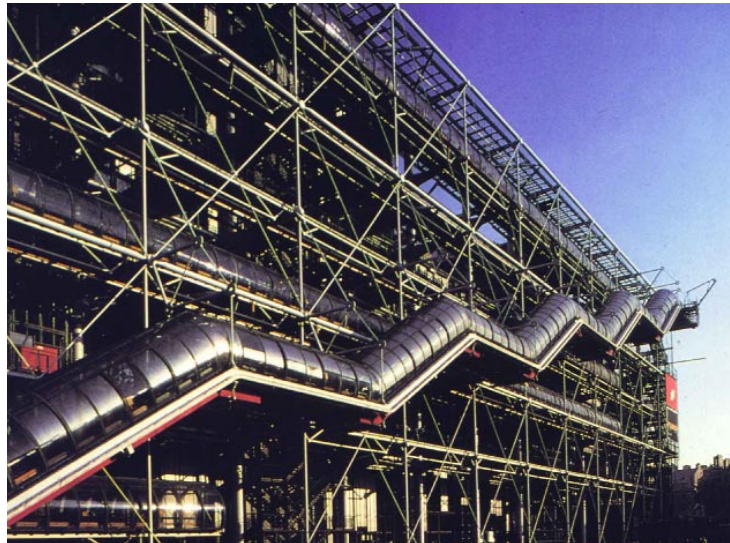
The idealistic orientation in design is just an aspect of the trend that permeates every angel of western thought. The French poststructuralist Jaques Derrida [4] criticised Saussure's suppression of the materiality of the sign and the primacy of the spoken word over the written. From Plato to Levi-Strauss speech have being regarded as a sign of truth and authenticity. Speech had become so thoroughly naturalised that 'not only does the signifier and signified seem to unite, but also, in this confusion, the signifier seems to erase itself or become transparent'. In seeking to establish "Grammatology" or the study of textuality, Derrida claimed the primacy of the material world. Roland Barthes also sought to revalorise the role of the signifier in the act of writing. He argued that in classic writing "the writer is always supposed to go from signified to signifier, from content to form, from idea to text, from passion to expression" For Barthes writing was a way of working with signifiers and letting the signified appear out of that. Subsequent theorists have tried to materialise the linguistic sign, claiming that words are things and texts belong to the material word.

Claude Lévi-Strauss made an observation of what he called bricolage. The process of creating something is not a matter of calculated choice but rather involves "a dialogue with the materials and means of execution"[11]. In such a dialogue, the materials that are ready to hand may "suggest" the course of action and the



This sofa by the Italian design group Memphis (1986) signals a new approach to the material world.

Centre Pompidou in Paris (1976) is a building turned inside out. The construction, elevators and ventilation is outside the building instead of inside. This leaves a huge open space inside, a form of modern cathedral, that breaks with the modernistic aesthetics.



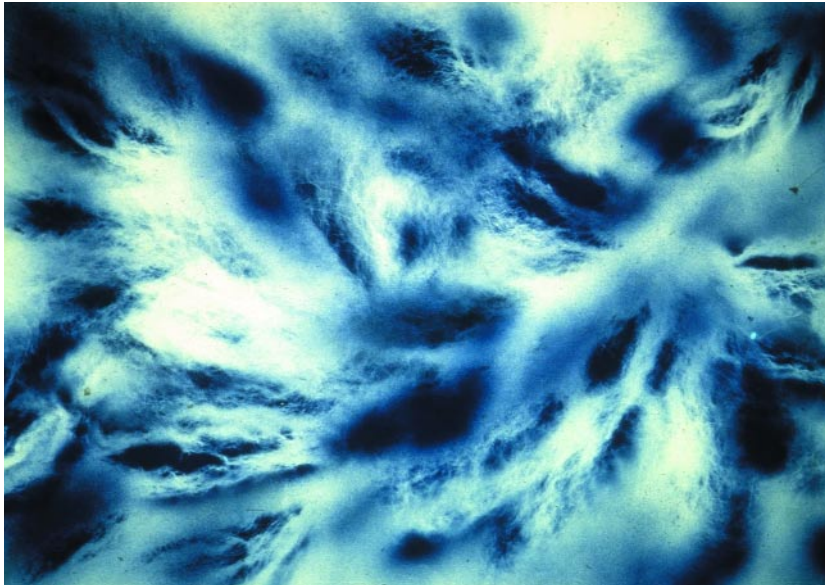
initial aim may be modified. The context for Lévi-Strauss observation was 'mythical thought', but Chandler suggests that bricolage can be involved in the use of any medium for any purpose.

Robert Venturi's "Less is a bore" paraphrased Mies van der Rohe's famous slogan 50 years earlier (Less is More) and signaled a new approach towards the material that precedes Derrida. And just as Barthes, Venturi claims that architects should work with the references and culture that surrounds them revalorising fake material and historical ornaments. Influenced by semiotic practice and poststructuralist critique, design and architecture started to look at the artefacts as 'texts' that could be read and the material world as a paradise of signifiers.

The Italian design group Memphis made furniture's that must have been a true modernists worst nightmare, a celebration of materiality.

In Sweden Postmodernism and the Memphis group had a very chilly reception. It was considered superficial, commercial and identified with the American concept 'styling'. In the Swedish context the signifiers became nothing but empty, which show us that meaning is truly not universal but individually constructed. For a Swedish eye a Bruno Mattson chair from 1934 is immensely more readable than a Jonas Bohlin "Concrete" from the eighties. It speaks to us about history, values, politics, ideals and broken dreams.

As Wittgenstein put it: "What something tells is dependent of its usage".



Yves Klein's "painting" in blue pigment is an example of abstract expressionism.

### Form and Content in Art

The modern art market developed at the turn of the last century at the same time as industrial design. In the wake of Romanticism came the myth of the lone genius, which had an impact both on art and on the new field of industrial design. The free market became the fundamental structure that shaped and re-shaped everything that came in its path. Art, which had until then concerned itself with style and beauty, developed into an area almost exclusively engaged itself with critical reflection, and shifted away from the "surface" toward the authentic. [7] Some artists were assigned to industry by the various design organisations where they became involved in practical aesthetics. During the twentieth century, the division was further reinforced. Art dedicated itself more and more to an internalised formalistic investigation that was distinct from the practical, functional work of industrial designer.

"The sublime is now" declared the American artist Barnett Newman in a polemic manifesto from 1948. He attacked the European art; they had according to Newman "got stuck in the search for real beauty". Now was the time for the sublime. He leaned back on a tradition from Kant where the sublime is seen as opposed to beauty. According to Kant, the sublime is invoked by chaos, infinity, wildness, disintegration and absolute greatness. Barnett Newman denied that art has any relation to beauty.

To achieve this greatness modernistic art went at length to disintegrate the signifier. Abstract expressionism tried to get to the "true expression", without references. Yves Klein worked only with blue pigment or had a perfectly empty show where you could buy "nothing" for gold.



Minimalism was the utter extreme of this approach, a white cube on a white floor, but did in fact turn the focus back on the context – the surrounding world. During the 60:ths came pop art, surrealism and Warhol's mass-produced artwork and Oldenburg's soft objects. Since then Art has been inspired by or cannibalised on design from time to time. From Oldenburg's vacuum cleaner to Jeff Koons, consumerism and desire have been criticised or ironised and the hierarchy of the signifiers and signified is not as simple as it used to be.

## Designing identity

Saussure pointed out that meaning arises from differences, and identity and differentiation are closely related. Design is important in constructing identity whether it's on a personal or national level. In the adolescent search for identity, clothes are used to give new meaning/identity to the wearer. Corporate Identity became a fashion concept in the 1980's but have been used by successful companies since the dawn of industrialisation. Even before that Nations have used design to construct or strengthen a cohesive identity. When nationalist movement in Finland became strong in the end of the 19:th century, artists, writers and architect put a lot of energy in creating a genuine Finnish style.

The first edition of the Finnish epic Kalevala appeared in 1835, compiled and edited by Elias Lönnrot on the basis of the folk poems he had collected in Finland and Karelia. Finland was then a part of the Russian empire and had before that belonged to Sweden. The Kalevala marked an important turning-point for Finnish culture and bolstered the Finns' self-confidence and faith in the possibilities of a Finnish language and culture. The Kalevala began to be called the Finnish national epic. Subsequent researchers have questioned the authenticity of Kalevala as a consistent epic, but it certainly served its purpose to prove a genuine Finnish identity. Poet Eino Leino, composer Jean Sibelius, painter Akseli Gallen-Kallela, sculptor



Villa Hvitträsk(1903) outside Helsinki by Gesellius, Lindgren and Saarinen is an example of Finnish National romanticism.



American designers applied streamlining on all kind of products from fridges and duplicators to pensharpener. Gestetner duplicator, by Raymond Loewy

Emil Wikström and architect Eliel Saarinen were inspired by Kalevala and embodied this vague Finnish heritage in their work. Villa Hvitträsk was built 1901–1903, by three architects, Herman Gesellius, Armas Lindgren and Eliel Saarinen in a national romantic style. Small windows, big open fireplaces and an arts and crafts-inspired design helps to create a traditional Finnish, yet contemporary and attractive style. In 1909 Finland became an independent country.

Adrian Forty [5] makes an amusing analyses of how streamlining became *the* style of America consumer industry in the mid twentieth century. The slick, clean surfaces were not only a nice and modern style but signified the hygiene, cleanliness and comfort that were shared by all Americans irrespective of national origin. Another important constituent of the idea of

Americanness was the belief in

material prosperity and the abundance of commodities, which thus needed to be freely available and identifiably American. The problem then was to discover the characteristics that would make products identifiable as American and create a cohesive massmarket. Americas culture is full of confirms of what it means to be American, a characteristic that seems odd to non-Americans, but has been very important to the development and cohesion of the nation.

In Sweden, modernism (funktionalism) has been very strongly connected to the social democratic movement and the creation of the so called peoples-home (Folkhemmet) City centres, Folkets hus and “Konsum” stores were build in the new democratic and international style that promised a new and better life. In that way the actual building itself became a visual metaphor for the democratic ideology that transformed the country.

1998 the social democratic party presented the Design proposition, a thorough and ambitious program about their policy in design and architecture. It was launched in the new Modern Museum by the premier minister himself who spoke both



This Konsumstore was showed at the Stockholm exhibition 1930 when modernism was introduced to Sweden. Modernism or “Funktionalism” as it was called in Swedish, immediately became a visual trademark for the growing socialdemocratic party.

initially and engaged about the need for good aesthetics.

Why is everybody suddenly interested in aesthetics? What does it mean?

Modernism in the 30'ths was very much a result of political ideas. Today modernism is debated and questioned and so is the ideology of the social democrats. 'Folkhemmet' is falling to pieces and there is nothing there to replace it.

It is likely to believe that Swedish socialists have looked over to Great Britain and New labour. Great Britain's new image as “cool Britannia” is not a spontaneous, natural development but the result of a conscious, consistent strategy.[16]

The new interest in design points to the fact that the Social Democrats are looking for content, that it is aesthetics that is now supposed to bring a content with it.

## Function follows form

During the nineteenth century, form was seen as distinct from function. The style of a building or an object was based on political values and morality and was not related to its practical uses and construction. A chair in a smoking room looked very different from a chair in the ladies' lounge not because men and women sat differently but because the chairs' primary function was to state the differences between masculinity and femininity. When the Duchess of Hallwyl furnished her newly built, highly modern palace in Stockholm in 1893, the dining room was decorated in the Renaissance style, the men's smoking room in the Arabic style, and the ladies' lounge in the Rococo style. Style had a symbolic meaning and was, above all, a way of demonstrating one's values. But nineteenth-century values and traditions collapsed in the wake of the expansion of capitalism. From 1850 to the



The Schlesinger-Meyer building by Sullivan 1904, has become an icon for the idea that Form follows Function.

beginning of the next century, history is heavy with the weight of the numerous publications that examined the relation between style and design. Augustus Pugin and John Ruskin, William Morris, Gottfried Semper, Owen Jones, Herman Muthesius, Nils Månsson Mandelgren, Ellen Key and Gregor Paulsson are a few of the names here.<sup>18</sup>

By the beginning of the twentieth century these ideas had ripened and Sullivan formulated this in his dictum “Form follows function.” For Sullivan, this meant seeing the building as an organic whole, and not as an inside and an outside without a relation to each

other. But we have to understand Sullivan within his own context. In 1904 when he finished the Schlesinger-Meyer house in Chicago, there had been a hundred years of aesthetic chaos, of shifting styles and fashions that succeeded one other within the framework of early, aggressive capitalism, and of aesthetic debates that had led nowhere. Technology and science, on the other hand, were seen as fields governed by rationality, progress, and method. New materials such as steel, sheet glass, and cement led to new construction techniques and forms. Technological development paved the way for a society in which rationality and scientific methodology was supposed to guarantee a functional society with its own appropriate aesthetic.<sup>19</sup> By the middle of the twentieth century, rationality was triumphant. The last ambiguities in design were to be erased with the help of strict, scientific methodologies.

Today we are standing before a technological and functionalist tidal wave. Within product and software design, technological criteria and maximum functionality have set the pace for a long time, and this has resulted in products that are of dismal use-value. A normal, little radio has a list of nearly a hundred functions. So do cell phones, not to mention PDA's. According to its ads, a Palmpilot V can guide even a jumbo jet, whatever good that might do us. There is little chance that we will ever manage to get through the manuals for all these gadgets and even less so of using all the functions fully. And the more things we fill our houses, workplaces, and pockets with, the less we manage to actually use them. During the previous

decades, Sullivan's dictum has been paraphrased many times. Postmodern semioticians claimed that "Form follows fiction", playful Italians came up with "Form follows fun" while frustrated architects countered with "Form follows anything". Perhaps it is time for a complete change in perspective. We find ourselves today at a point where technology and science are as complex and strained as aesthetics was a hundred years ago. Perhaps it is time to see how aesthetics could guide technology. Function follows form: design as a way of creating meaning and comprehensibility in a world of over-functional chaos.

## **Conclusion**

The relation between content, form and technology in contemporary product design is highly complex. The aesthetical theories of modernism is still very much alive, not the least in the very tangible form of buildings, products and art that constitutes our material culture. This text is an attempt to show how we can understand and analyse these phenomenas using methods from semiotics. By doing so we will be better equipped to design the products and information technology of the future.



## References

- [1] Asplund et al., *Acceptera*, Stockholm: Tiden, (1931)
- [2] Barthes, *Mythologies*, New York, Hill & Wang (1967)
- [3] Chandler, *Semiotics – the basics*, Routledge (2001), See also the extended netversion at [www.aber.ac.uk/media/Dokuments/S4B](http://www.aber.ac.uk/media/Dokuments/S4B)
- [4] Derrida, *Of Grammatology*, (1976)
- [5] Forty, *Objects of desire*, London: Thames & Hudson, (1986)
- [6] Fiske, *Introduction to communication studies*, London: Routledge(1982)
- [7] Greenberg, *Det modernistiska måleriet, Konsten och konstbegreppet*, Stockholm: Raster (1996) ("Modernist painting" from Collected essays and criticism IV. 1993)
- [8] Hjelmslev, *Prolegomena to a theory of language*, Madison: University of Wisconsin press. (1961)
- [9] Krippendorff, Butter ed. *Product Semantics: exploring the symbolic qualities of form*. Innovation. vol 3 no 2, (1984)
- [10] Lacan, *Ecrits*, London:Routledge (1977)
- [11] Levi-Strauss, *Structural Antropology*, Penguin, (1972)
- [12] Lakoff and Johnsson, *Metaphors we live by*, University of Chicago press (1980)
- [13] Monö, *Design for product understanding*. Stockholm: Liber (1997)
- [14] Saussure, *Course in General Linguistics*, London: Fontana/Collins (1916/1983)
- [15] Silverman, *The subject of Semiotics*, New York: Oxford University Press (1983)
- [16] Woodham, *The Rebranding of Britain*, lecture delivered at the symposium "Is Everything a Product?" at Moderna Museet on May 27, 2000.
- [17] Vihma, *Products as representations – a semiotic and aesthetical study of design products*. University of Art and design, Helsinki (1995)
- [18] Wickman, ed., *Form genom tiden*, Stockholm: Svensk Form, (1992).

